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ABSTRACT

In the fall of 1979 a third-year course in educational administration at the University of Victoria was presented via an interactive communication satellite called Anik B. Students enrolled in this first Canadian university satellite course for credit were 65 administrators and potential administrators of schools, and classes met in community colleges in five interactive centers falling within satellite range. Meetings were once a week for ten weeks in classrooms equipped with television monitors and telephones. Instructors retained responsibility for course structure and content, as well as for the organization and administration of this distance study program. An evaluation of the first and last session of the series assessed the pedagogical moves (verbal and nonverbal) of the instructor, and instructor attempts to create and maintain a sense of a single class among the students in the five locations. It was found that: (1) the system allowed instructors to approach the face-to-face setting closely although the technology did not allow much interpersonal communication; (2) the instructor brought to the experience cultural traditions and values from classroom teaching and television viewing; and (3) there was evidence of the instructor's domination of the lesson processes. (MER)

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AN EXPERIMENTAL UNIVERSITY COURSE VIA INTERACTIVE SATELLITE: SOME FINDINGS AND IMPLICATIONS

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AN EXPERIMENTAL UNIVERSITY COURSE VIA INTERACTIVE SATELLITE: SOME FINDINGS AND IMPLICATIONS

A team from the University of Victoria in British Columbia, Canada, delivered the first Canadian University course for credit via Anik B, an interactive communication satellite in the Fall of 1979. Anik B permits two-way audio and one-way video communication. The mandate given to the project team was to present a third year course in Educational Administration successfully exploiting the interactive nature of the system. The sixty-five administrators and potential administrators of schools who registered for the course met for classes in community colleges in 5 interactive centres falling within the footprint of the satellite-- Cranbrook, Dawson Creek, Port Alberni, Prince George, and Terrace. Terrace, the furthest, was 848 miles from the transmitting station; at 67 miles away, Port Alberni was the nearest. The number of students in a single centre ranged from 6 to 23, with a mean section size of 13. Eighteen students opted to audit the course; of the remaining 47 who originally intended to take the course for credit, 33 submitted final projects for a course grade. The completion rate was, then, 70.21%.

The students convened once a week for 10 weeks in classrooms equipped with T.V. monitors and telephones, all connected to the central communication system. For each session there

was a maximum of 75 minutes air time. On the average, 60 minutes were used for instructional purposes, and the remaining time for tending administrative, course, and system details. Pre-session and post-session activity times combined with actual air time to meet university time requirement for 1.5 units of work.

The project was carried out under the auspices of University Extension and the office of Education Extension Programmes in the Faculty of Education. A project director, a professor of Educational Administration, was responsible for the development of the curriculum, the instruction, and the project as a whole. An academic assistant, a graduate student in Educational Administration, shared these responsibilities. A project coordinator was responsible for personnel, preparation and delivery of the course materials, and the delivery of the course content via the interactive satellite system. These responsibilities were shared by another graduate student in Educational Administration.

The philosophy, general direction of the course, and its outline were developed by the project director. The instruction was presented by a team of 9. Two instructors conducted two sessions each, 2 shared a single session, and the remaining 5 conducted one session each. The director conducted the first and last sessions, and introduced and concluded all other sessions in an attempt to provide links between the sessions. Instructors

had been invited to participate based on their recognised expertise in the general content area, and, specifically, in the topics that formed the sequence of the course outline. All instructors were invited to a session where the general direction of the course was discussed so as to give them a sense of the whole. A resident field associate, a principal, carried out some administrative activities in the field (for instance, overseeing registration of students, distributing materials, administration of a pre- and post- test questionnaire etc.) and facilitated the groups in pre- and post-session activities as well as off-air assignments. These associates were oriented to their function and responsibilities via the system before the course began.

In summary, the team which delivered the course was responsible primarily for course structure and content, organisation and administration of the delivery, course creation, evaluation and revision, all as defined by Holmberg.[1] Other facets as the establishment of a rationale for distance study, overall goals and objectives, identification of target groups and organisation and administration at the institutional level, emanated from the offices of University and Education Extension. The medium of communication used and broadcast facilities which existed beyond the physical limits of the University were given conditions.

The summary data presented here is based on a post-hoc analysis of the first and last sessions of the series. They were taught by a single instructor, the author. Videotapes of these two sessions were reviewed by the author three times each, and typed transcripts were produced. Critical incidents were then identified for analysis. Two criteria were established for determining incidents that were critical: (1) pedagogical moves (verbal and non-verbal) made by the instructor which in her mind were conditioned by the system of communication being used, and (2) attempts at the creation and maintenance of a sense of a single class among 65 students in 5 locations so that interaction would flow naturally between sections of the class.

The verbal behaviour of the instructor in the first session indicated an awareness of the separateness among the groups and attempted to create the illusion of a single class by frequent use of "us," and phrases like "the section of the class in Dawson Creek" and "so this is a very large class." These were all attempts to overcome physical separateness among the groups through the creation of the "illusion" of a single class, and a sense of belonging to that class. If communication were to extend beyond student-instructor interaction to include pupil-pupil interaction, then the creation of this sense of a single group seemed important.

The instructor's use of extended questioning was a result of the intrusion of a sense of the costliness of time on

television which created a sense of urgency, and therefore the need to keep conversation going. There was, too, a resultant distortion of the passage of time. Throughout the sessions under analysis, there was an inordinate number of references to "time" by the instructor and students later echoed this too. There appeared to be no time for unstructured periods of time for thinking; television did not seem a medium for that kind of silence. Second, the lack of non-verbal feedback of an affective nature created, at times, anxiety for the teacher, hence there were questions seeking a verbalisation of affective states. The instructor's non-verbal behaviour (for example, frequently glancing at a member of the team present in the studio for affect throughout the session, especially when a joke was attempted, or a point made strongly) seems corroborative.

The instructor tended to externalise inner thoughts, and to repeat comments made by students as they were being recorded on the chalkboard. The compelling factors in these instances were, again, the disturbing sound of silence, and, subsequently, in these instances, a compulsion to present continuous commentary, not unlike that which is done at times on commercial radio and television.

The fact that video communication was one-way appeared to make it more compelling that the instructor control the processes of the class, perhaps more than she would need to do in face-to-face situations. When data on the verbal behaviour of the

instructor was compared with data gathered from face-to-face settings the instructor exhibited approximately 5 times as much structuring verbal behaviour than was exhibited in the other settings. While it is premature to attempt to explain this in any general way from so small a data base, there are indications that this might be a result of the constraints of the medium. For instance, the instructor noted that she gave consistently more specific details and directions (and even tended to repeat them for clarity), than she was aware of doing in face-to-face settings. Because eye contact with students was missing it was almost an attempt to make sure that they were there and were hearing or seeing, as was the case.

Throughout the sessions students in a single centre did not communicate directly with students in the other centres. Furthermore, all communication, even if it were about another student's input, was addressed to the instructor. This lack of direct interaction via the system among the students in the different centres was incongruous with the instructor's notion of a single class in interaction. In the final session, therefore, the instructor attempted to contrive circumstances which might encourage this kind of interaction. All the students were given an off air assignment in which each group was required to make conclusions about certain elements of a case that had been presented. Before the assignment began they were told that Terrace, for example, would be asked to report on the

conclusions reached there, and that Cranbrook should then be prepared to react to Terrace's conclusions by speaking directly to Terrace, rather than indirectly through the instructor. This was done three times so that each group had a chance to present its conclusions and to react to a presentation. The students were unable to hold a conversation with their colleagues in the other centres whom they could not see.

In summary and conclusion three points deserve reiteration:

(1) The system allowed us to approach the face-to-face setting most closely, but the technology appeared unable to permit that factor needed to make inter-personal communication complete. This produced a kind of fickle reality which created dissonance for the instructor and, by extension, her students. The one-way video system did not permit feedback to the instructor of the students' definition of their relationship with her; the system of communication was only partially open. This did not allow, then, for her regulation of that relationship, hence the high level of anxiety and the high content of affective verbal behaviour exemplified in session 1 in particular.

(2) The instructor brought to the experience cultural traditions and values from classroom teaching and television viewing. The effects of these past traditions as a determining factor on the current experience was marked. The costliness of air time and the need to present material graphically, running commentary, delivery modes in which concern for effective pedagogy

must compete with a concern for that which is visually aesthetic, were all legacies from television and radio experiences which appeared to have had an impact.

(3) The third point relates to the notion of teacher control. There were evidences of the instructor's domination of the processes of the lessons. Without more extensive research it is still an issue as to the extent to which this domination was conditioned by the medium or by the instructor's style. There are, however, oblique indications that the medium may lend itself to more instructor control than is desirable, particularly when working with adults. It would be precipitous to attempt to make recommendations here, other than a call for more research. Paradoxically, the instructor lost control in another sense. The teaching role became more complex and was shared by the field associate and the operator at the controls who made decisions as to what points to emphasise and de-emphasise through his manipulation of the camera. The word of caution here is that we do not allow the technology to lead us to reconstruct curriculum and tested teaching/learning processes indefensibly and to the extent where the curriculum becomes the servant of the medium. The issues, as I see them are primarily pedagogical, philosophical, political and social psychological.

Recall that these findings were derived from analysis using a stimulated recall technique on two sessions taught by a single instructor. The intent and scope of the paper

then, did not permit a discussion of some of the more positive aspects of the experience as a whole.

To provide some sense of balance, in conclusion, it should be noted that there are data reported elsewhere which indicate that the course presented as a Canadian prototype was very well received; student performance on cognitive objectives was excellent and was comparable to face-to-face settings on campus; instruction on the whole appeared superior by any standard; the situation opened up the classroom in that instructors taught under the scrutiny of a colleague.

While the issues and problems are obvious, the potential of the system for educational purposes is impelling. Care must be taken to see to it that knowledge about pedagogy via this medium derived from research and contemplation keep abreast with technological advancement.

Reference:

Holmberg, Borje. "A Conceptual Framework for Practice in Distance Education" Canadian Journal of University Continuing Education, Vol. VI., No. 1, Summer, 1979.